

App. No. 10/825,033
Office Action Dated June 30, 2006

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IN THE CLAIMS

Amendments to the Claims:

This Listing of Claims will replace all prior versions and listings of claims in the application. No new matter has been added.

Listing of Claims:

1. (Currently Amended) A method of forming a ferroelectric thin film, comprising:
forming a seed layer containing an ultra-fine particle powder comprised of an element constituting the ferroelectric thin film to be subsequently formed on a surface of a substrate, the ultra-fine particle powder being present in the seed layer with a concentration in the range of 0.00001 wt% to about 1 wt%; and
forming the ferroelectric thin film on the seed layer through crystallization.
2. (Previously Presented) The method of forming a ferroelectric thin film as claimed in claim 1, wherein forming the seed layer includes:
applying a solution containing the element constituting the ferroelectric thin film to the surface of the substrate; and
drying and baking the solution applied to the substrate.
3. (Previously Presented) The method of forming a ferroelectric thin film according to claim 2, wherein forming the ferroelectric thin film includes annealing the seed layer for crystallization.
- 4-5. (Cancelled)
6. (Currently Amended) A method of forming a ferroelectric memory including an FET of an MFMS structure, said method comprising:
forming a gate insulating film on a semiconductor substrate and between source-drain regions;
forming a floating gate on the gate insulating film;
forming a ferroelectric layer on the floating gate; and

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forming a control gate on the ferroelectric layer,
wherein forming the ferroelectric layer comprises:

forming a seed layer on a surface of the floating gate, the seed layer containing an ultra-fine particle powder comprised of an element constituting a ferroelectric thin film to be subsequently formed on the seed layer, the ultra-fine particle powder being present in the seed layer with a concentration in the range of 0.00001 wt% to about 1 wt%; and

forming the ferroelectric substance thin film on the seed layer through crystallization.

7-8. (Cancelled)

9. (Currently Amended) A method of forming a ferroelectric memory comprising:

forming an FET including a gate electrode formed on a surface of a semiconductor substrate between source-drain regions, the source-drain regions formed on the surface of the semiconductor substrate through a gate insulating film; and

forming a ferroelectric capacitor connected with one of the source-drain regions of the FET through a storage node contact, wherein forming the ferroelectric capacitor comprises:

forming a first electrode;

forming a seed layer on a surface of the first electrode, the seed layer containing an ultra-fine particle powder comprised of an element constituting a ferroelectric thin film to be subsequently formed on the seed layer, the ultra-fine particle powder being present in the seed layer with a concentration in the range of 0.00001 wt% to about 1 wt%; and

forming the ferroelectric thin film on the seed layer through crystallization.

10. (Previously Presented) The method according to claim 1, wherein the ultra-fine particle powder including a circumference that may be covered with a surface active agent and being mixed with an organic solvent.

11. (Previously Presented) The method according to claim 10, wherein the organic solvent may be α -terpineol.

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12. (Previously Presented) The method according to claim 10, wherein the organic solvent is selected from the group of xylene, toluene, 2-methoxyethanol, and butanol.